

VOC AG VIEWS

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AUTOMATIC TRANSMISSIONS BY DON TRAPP

A five percent increase in overall automotive economy would result in a saving of 450 million dollars a year in America. Improvements in transmissions might well provide some of this efficiency increase. Automatic transmissions of many types are making their appearance in our motor vehicles and tractors of today. Some of the advantages, disadvantages, and limitations of the automatic transmissions will be shown, though a detailed study of each unit is not within the scope of this paper.

An ideal transmission would give an infinite number of gear ratios between engine and rear drive to allow uninterrupted acceleration, yet keeping maximum load on the engine at all times. It would have low initial cost, be light in weight, require a minimum of space and maintenance, run with a high efficiency and require a minimum of driver skill and attention.

Present standard transmissions meet most of these conditions. They are relatively cheap, are light in weight, require small space and maintenance, and are approximately 95% efficient in power transmission. The three or four gear ratios provided require considerable operator skill in shifting and give breaks in a desired constant acceleration. Original selection of these gear ratios will either be at the expense of performance or economy - in all cases thinking of the total gear ratio of the transmission and rear axle as a unit. With normal gearing selected for a balanced economy - performance ratio and on level road cruising, engine speed is high yet the throttle is only partly open. A partial fuel - air charge will be drawn in on each piston stroke so that in effect a high compression engine is being run as a low compression engine with relatively poor fuel economy.

Three types of automatic transmissions might be discussed under three main headings: the fluid coupling or so-called "Fluid Drive"; the automatic shifting gear transmissions; and the torque converter units.

The fluid drive is merely a "shock absorber" unit placed in the power train in conjunction with a conventional clutch and gear transmission. A fluid coupling does not multiply torque but will allow slippage at low speed so that the engine may build up speed to a point where the engine torque is greater. At higher engine speed the slippage in the coupling becomes very small and the efficiency about 98% for the coupling itself. A fluid drive vehicle can be started in high gear without danger, though normally two gears are used for traffic. With this unit, one acceleration break has been eliminated, shock on the gear train is minimized, and less driver skill is required in operating the clutch. The normal transmission and rear axle ratios are used, so the overall fuel economy can be expected to be about even or slightly lower than with a conventional transmission. Cost of a fluid drive unit will be about \$80. more than a standard transmission.

The automatic shifting gear transmissions are of several types. General Motors "Hydramatic" was the first production unit to provide a fully automatic full torque shifting and thus eliminate the breaks in acceleration. This unit was used in medium tanks during the war. Expedition Muskox vehicles used twin Cadillac engines feeding power through Hydramatic transmissions to a common gear box.

The Hydramatic unit consists of a fluid coupling and three planetary gear units. Two planetary units are used to obtain four forward speeds, the other providing reverse.

AUTOMATIC TRANSMISSIONS (cont'd)

No foot clutch is required - all shifts are made automatically as determined by vehicle speed and throttle position. The rear axle ratio is lower than that of a conventional transmission thus reducing engine speed and providing better economy. The added cost is approximately \$200.

Chrysler "Simplimatic" transmissions use two gear ratios in conjunction with a fluid coupling. Automatic shifting is possible up or down in either range with a manual shift from one range to the other. Upshifting necessitates lifting the foot from the accelerator and thus constant acceleration is not realized. Normal driving is done in the high range, the low being used under extreme conditions. Slightly lower gear ratios are used so the economy should be slightly better than with a standard transmission. The additional cost is approximately \$150.

The torque converter units are used on a number of units, normally in conjunction with a two speed gear transmission. The torque converter is similar in appearance to a fluid coupling but because of the addition of reaction members or "stators" and the arrangements of the blades of its pumps and turbine it can multiply torque. In so doing, it provides an infinite "gear ratio" over its range of speed reduction. It reaches a maximum efficiency of approximately 85% at about .7 to 1 ratio, then the efficiency drops. Since most road driving is with a 1-1 ratio in the transmission, some arrangement is made to cut out the torque as the 1-1 ratio is approached. By free-wheeling the stators of the unit, it automatically becomes a fluid coupling which has a high efficiency in this range. This is the arrangement in the Chevrolet "Powerglide" and Buick "Dynaflo" transmissions. In Packard's "Ultramatic" a clutch engages to give a direct mechanical connection as the 1-1 ratio is approached.

These units have a high range for normal driving and a low range for extremes. A manual shift is made from one range to the other. No clutch pedal is required. A slightly lower rear axle ratio is used so, on long trips, some increase in economy will result. Under start, stop

conditions a poor driver can expect lower mileage than with a conventional transmission. The cost is approximately \$200. above the standard transmission.

The Allis-Chalmers HD19 tractor uses a torque converter operating in either a high or low range. For many jobs, the absence of gear shifting time and the high power loading kept on the engine makes it very attractive, despite the fact that the mechanical efficiency of this type of transmission is less than that of a standard gear type. Agricultural tractors are normally desired to run at constant speed and there are few applications where the variable speed transmission of this type would be advantageous.

Some form of automatic transmission is warranted in city bus work where constant acceleration and performance are desirable. Driver fatigue is a factor and, in some cases, a conductor to take tickets may be eliminated. The cost of such a transmission is a small fraction of the total vehicle cost when compared to its use in automobiles.

Cost is a big factor in the adoption of the automatic units. Where traffic is light and high performance is not required the standard transmission will give equal economy at considerably less cost. Where heavy traffic demands high acceleration with a minimum of driver attention, then the extra cost of the automatic transmission may be worth while despite the fact that no overall economy can be expected.

SOME LITTLE BUG

In these days of indigestion
It is oftentimes a question

As to what to eat and what to leave alone
For each microbe and bacillus
Has a different way to kill us,
And in time they always claim us for their own.

There are germs of every kind
In any food that you can find
In the market or upon the bill of fare.
Drinking water's just as risky
As the so-called deadly whiskey,
And it's often a mistake to breathe the air

EDITORIAL PAGE



Well, cold and stormy January has come and gone, and with it the first half of the School year. Perhaps at this time it is good to take stock of ourselves.

Up to now our School life has been quite busy, along with classes, socials, dances, club groups, and even a bit of studying. We can expect the rest of the term to have a lot more activity.

Most of us survived the Christmas holidays, only to come back and find our residence "invaded". Farm and Home Week was rather hectic, but we're sure the many visitors to our campus enjoyed themselves.

Soon, however, we were back in the routine. The S. V. A. A. got down to business with budgets and reports from our well-scratched Directorate Heads.

Plans were soon made for the Religion and Life Week discussions to be held in the School. A foul stroke of fate, in the form of Scarlet Fever, soon cancelled those, however. As we are in semi-isolation, such institutions as the Normal School, Mayfair hall, and the Hospital residences are apt to feel the pinch.

Our immediate future is forboding, due to the mid-term tests. The big event of the year, the Little Royal Exhibition, is really worth our entire support, fellows. It is our Little Royal that really "sells" the School. So don't forget to remind your family and friends of that all-important date, March 7-8.

Following final exams, the social event of the year is the Graduation Banquet and Dance. Our comrades in the

second year will receive those precious Diplomas. We will then realize that our life here in the School has been a good life and a full life, and we will have much to be thankful for.

Mechanics Short Courses

Upon entering as short course students, we were somewhat dubious as to whether our time and money would be well spent. As time goes on we become more assured than ever that the short courses have a definite advantage for future farmers.

Another factor that may have come to our mind, was whether we would be received here with hospitality. We have every possible reason to feel quite at ease. Most of us in the dormitory are participating in social functions, sport, etc.

- The short course student is at somewhat a disadvantage, seeing that many have been away from school for a considerable length of time; another disadvantage sets in and that is adjusting oneself to studies, being able to concentrate as the mind can absorb no more than the seat can endure.

The instructors are very tolerant in making explanations, and are enthusiastically aiding in every possible respect to make the short course a success.

Johany E. Atanenko.

TOMMY FRASER MEMORIAL TROPHY

Each year a student of either the School or College of Agriculture is awarded a trophy in memory of the late Tommy Fraser. To merit it, that student must have exhibited a number of sterling qualities in the field of athletics during the year.

Tommy Fraser himself was an ardent athlete. The fact that he had exceptional athletic ability was overshadowed by his love of the game and his sporting nature. He graduated from the University of Saskatchewan in 1936 with a Bachelor of Science in Agriculture and in 1938 joined the R. C. A. F. It was while with this group that he was killed in an airplane crash in British Columbia.

This Memorial Trophy was originated by his friends at the U. of S., especially the S. A. C. G. A., in the hope that qualities of sportsmanship similar to his may be stimulated as well as recognized, in an Agriculture student each year.

The selection of such a student is based on such factors as the will to win without thought of personal gain, the love of the game, and the ability to stimulate team-mates to their maximum height of ability.

The actual choosing is based on a table which allots a certain number of points for each aspect of good sportsmanship so evident in the late Tommy Fraser.

The selection of a student is made by a committee consisting of the Dean of Agriculture, the Director of the School of Agriculture, the head of the Physical Education Department, the president of the S. A. C. G. A., the president of the S. V. A. A. and the president of the A. S. A.

The data on this Trophy is being headlined, now, in the hope that any questions concerning it may be cleared and in the hope that students in the School and College may put forth an effort towards winning this very worthy Trophy.

The Bird and The Beast

The bird I am going to write about is the Owl. The Owl cannot see at all by day and at night is as blind as a bat.

I do not know much about the Owl so I will go on with the beast I am going to describe. It is a cow. The cow is a mammal, it has six sides—right, left, an upper and below. At the back it has a tail on which hangs a brush. With this it sends the flies away so they do not fall in the milk. The head is for the purpose of growing horns and so that the mouth can be somewhere. The horns are to butt with, and the mouth is to moo with. Under the cow hangs the milk. It is arranged for milking. When people milk, the milk comes and there is never an end to the supply. How it does it, I have not yet realized, but it makes more and more. The cow has a fine sense of smell; one can smell it far away. This is the reason for the fresh air in the country.

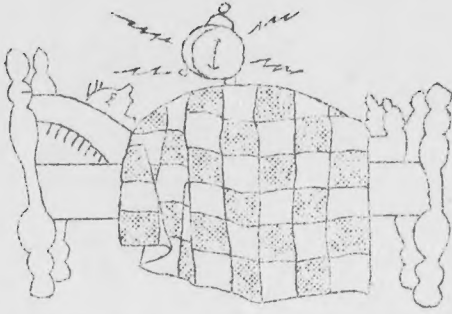
The man cow is called an ox. It is not a mammal. The cow does not eat much, but what it eats, it eats twice, so that it gets enough. When it is hungry it moos, and when it says nothing it is because its inside is all full up with grass.

MOO!

Summer is over, the old cow said,
And they'll shut me up in a draughty shed
To milk me by lamplight in the cold,
But I won't give much for I am old.

It's long ago that I came here
Gay and slim as a woodland deer;
It's long ago that I heard the roar
Of Smith's white bull by the sycamore.
And now there are bones where my flesh
should be;

My backbone sags like an old roof tree,
And an apple snatched in a moment's frolic
Is just so many days of colic.



DORM AMBLE

A modest woman never pursues a man;
nor does a mousetrap pursue a mouse.

Since the last issue, Stanley Jones, President of the Winnipeg Grain Exchange has paid his annual visit to the School. Two informative talks were given by Mr. Jones. Judging from the comments, those along with the question period were met with keen interest by the fellows.

She : "If you were my husband, I'd give you poison.

He : If I were your husband, I'd take it."

We notice an item in the Sheaf, last Friday, complimenting Nick Stooshinoff for bringing out the Voc Ag water polo team to every game even though they very seldom win. It is certainly encouraging and with determination and luck they will win yet.

: "I am the most graceful dancer in this State.

: You may be, in this state, but not when you are sober."

"I saw you coming out of a saloon late last night."

"Well, I had to come out some time."

On the subject of sports, the Voc Ag teams in basketball and hockey seem to have hit their stride. Last week, each chalked up an imposing win. So how about turning out "en masse" to the next games

During the war, an engineer had done a great deal of work in erecting bridges in a province of India. In appreciation, the Maharajah sent him a bag of emeralds. The recipient was very grateful, but refused the gift with a hint :

"Golf clubs are rather difficult to buy in my country, so I would appreciate two or three of them."

On returning home the engineer received a letter which advised,

"The Maharajah has obtained three golf clubs but regrets that only two have swimming pools."

Lately we have seen a number of heads being poked into the door of 200, asking where Gavin is. In reply to "what's the trouble" they all say,

"Oh somebody has got a red face and a sore throat."

Movement is going to be restricted to and from the building as much as possible for the next week or so, until this scarlet fever scare is done away with

Gally : "Joe is certainly an awful flirt.

I wouldn't trust him too far.

Mary : Fuh, I wouldn't trust him too near."

Our belated greetings go out to the Dairy and Farm Mechanics Course fellows who are living in the building now. We hope everyone is contented with life and hope that you will all enjoy the rest of the term here.

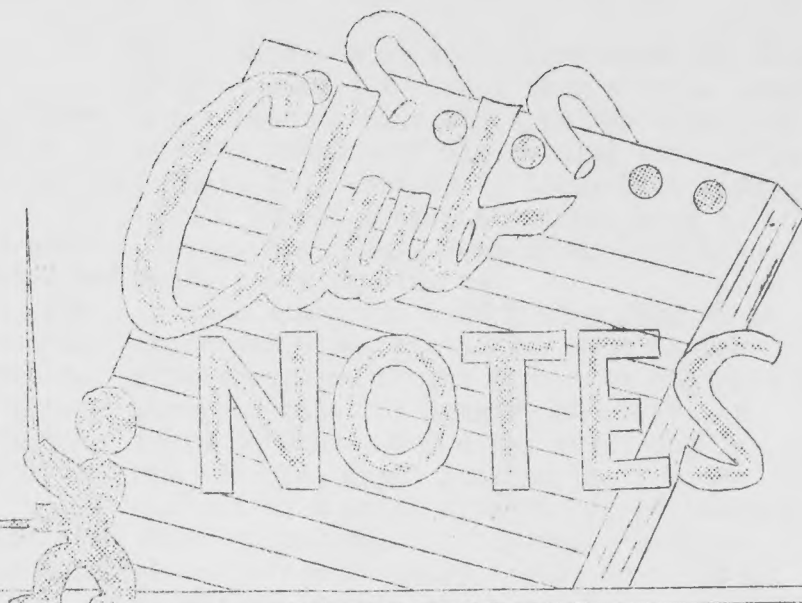
Sign on a farm gate: Beware, we shoot every tenth peddler. The ninth just left.

MECHANICS

AGRONOMY

LITERARY

LIVESTOCK



MECHANICS' CLUB

Most of the groups have not a great deal to report except that most of the members are working on a special project for the Little Royal. Pictures were taken last Thursday by Ruth Slotzer of each group as they worked. These will appear in the Mechanics Group Display in the Little Royal.

The Woodworking Group - are continuing with their individual projects. The edition of the *Vog* ~~Ag~~. Views will carry exactly what each member is doing, as they have planned to have a meeting this week to decide this.

The Deisel Study Group - will continue and probably complete their studies on Oliver, Cockshutt, Massey and the Perkins Deisel systems. In two or three weeks they plan to make a tour of the Lambert Electric to see the Deisel Injection Test. The Motor Overhaul and Mechanic Study Group - last week made two tours of the John East Iron Works and Early Motors and compared both methods of reconditioning motors. They also witnessed some foundry work and all were much interested in what they had seen.

The Building Group - have completed their lectures and have begun a Little Royal display. One of the members is drawing up the blue-prints while the others work on a model of a machine shed.

The Hobby Craft Group - are continuing with their individual projects and a few are working on a specialty for the Little Royal.

The Irrigation Group are carrying on with their Little Royal projects.

The Welding Group had a meeting last week to discuss what they have accomplished and what they will carry out in the future Thursday afternoon periods.

AGRONOMY CLUB

There have been two new projects started since the last report, and we plan to start on another in a few days. One of these which should be of interest is an experiment to determine whether 2,4 D will accumulate in the soil and cause sterility. This should be of interest to everyone who is using 2,4 D to control weeds.

We had an interesting interview with Mr. Banting who is taking his Master's degree in Agriculture. He showed us some of the work he has been doing in connection with estimating the germination and emergence of frozen wheat. by the method he has been using, a very accurate estimate can be arrived at. He also has found that deep seeding has a very definite effect on frozen seed. Where it showed fair emergence from an inch and a half, the wheat didn't come up when seeded at 3 or 4 inches.

Our Little Royal display has been planned and some work has been done. This year it is going to be bigger and better than ever.

"Why does a traffic light turn red?"
"If you had to change in front of all those people, you'd turn red too."

CLUB NOTES (cont'd)

Livestock Club

The Livestock Club held its regular meeting in the livestock pavilion last Thursday. The hog killing project is now finished.

The livestock entry list was compiled with twelve beef cattle entries and fourteen dairy cattle entries. There were also seven sheep and seven swine entries. With all classes contested fairly evenly, a keen competition for the Grand Aggregate is expected. In addition to the above mentioned entries, there were also nine in the horse class.

It is the hope of the livestock club that the livestock show in the Little Royal will be the best yet.

LITERARY CLUB

Great activity has taken place in the Literary Club this last month, although the greatest part is still to come.

Our freshman debating team of Curtiss Boe and Reuben Ziolkowski, did very well in defeating the W.A.S.A. team on Jan. 11. The boys were defeated, however, by Household Science on Jan. 22, thus putting them out of the race for the Freshman Debating Cup. Still in the field of debating, Stan Nowakowski and Allan Smith have been picked to debate against the Agro team at the forthcoming A.S.A. Field Day.

There has been great interest aroused in drama. This arose from a most interesting talk, which was given by Professor Gordon, last Tuesday, Jan. 23. Under the direction of Professor Gordon, preparation for a play to be given at the Little Royal has begun. The cast was picked out on Jan. 26 and consists of Allen Barr, Stan Nowakowski and Curtiss Boe.

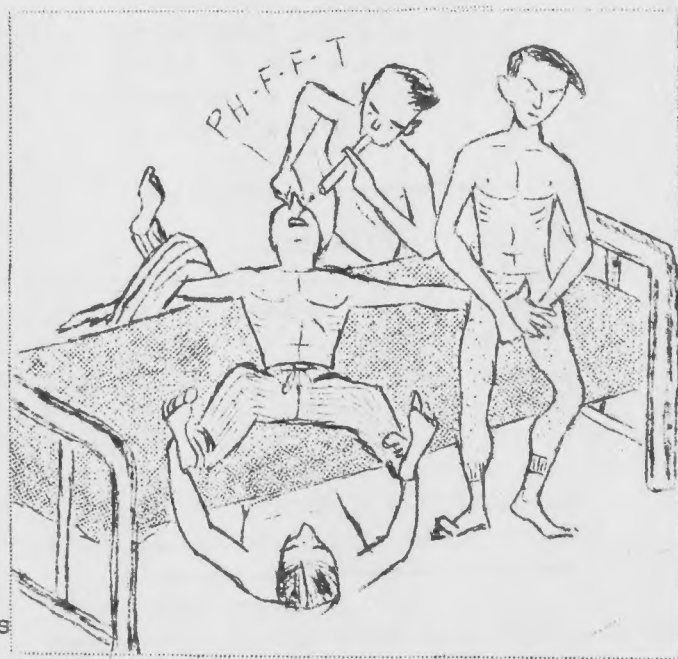
Joe Linnell and Allen Barr have been busy lately writing scripts and reports for the radio. One programme will be on February 8, when the Junior Chamber of Commerce will sponsor the School of Agriculture's choral group and some highlights of the School's work. A write-up is going out to Bob Knowles of the C.B.C. Prairie Farm Broadcast. This is in connection with the Little Royal.

SOCIAL REPORT

On Friday Jan. 19, a student-faculty whist drive was held in the School auditorium.

Court whist score cards were used and those present seemed to enjoy them selves. Lunch was served at 11 o'clock in the Cafeteria and the winners of the evening were awarded prizes. They were as follows: High Lady, Miss Margaret Maczka; Low Lady, Miss E. Lickay; High Gent, Kenneth Miller; Low Gent, Bruce Tomlinson.

A dance was held Friday Jan. 26 in the auditorium. The hockey game at the rink drew some of the boys away but they returned twice as hungry and twice as ready to dance. Our congratulations to Mr. and Mrs. Cecil Jenkins who won the contest of dancing with an orange between their foreheads. The old time orchestra plays better at every dance and a lot of credit are due to the boys who are in it. The modern orchestra also draws its share of complements from the visiting ladies. Mr. and Mrs. Baker were patron and patroness for the evening. We'll be having another dance in the near future so be sure to make it another good one, oh fellows.



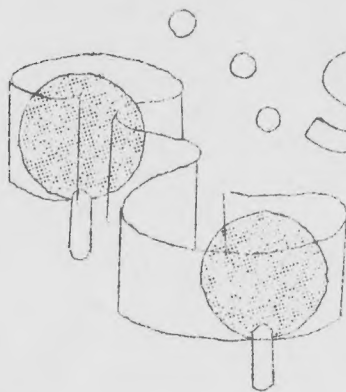
PILL TIME

DAIRY COURSE

The dairy course class, having mastered the first week, settled down to their studies. An attempt is being made to absorb all the lectures and labs. Dairy bacteriology became of interest to all, when a member of the class had a two weeks holiday with chicken pox.

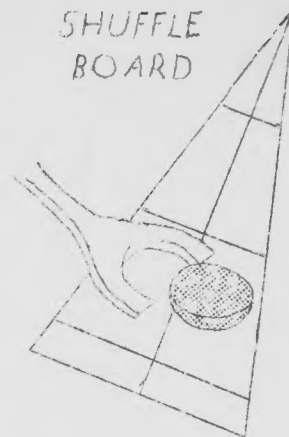
The attendance at class is very good except for Friday afternoon and Monday morning. It seems that bus and train service

TABLE TENNIS



SPORTS

SHUFFLE BOARD



CURLING

During the last week there has been no curling due to the City Bonspiel but the schedule will go on as usual this week.

BASKETBALL

Well, believe it or not, the impossible finally happened when our Basketball team won its first game last Monday. The score was Voc Ags 41, Arts (2) 11. We were sorry to see however, that there were very few Voc Ags present to see our first win. I hope that in the future there will be a better turn-out. How about it, fellows?

Pin Topplers	18
Hayseeds	17
Prairie Ramblers	15
Alley Cats	15
Temperance	14
Dead Boats	14
Bill Pounders	13
Challengers	12
Greyhounds	9
Foxes	9
Boozers	9
Eagles	4

HOCKEY

The Voc Ag (I) team has played three games so far. The first, played against S.T.M., ended in a tie. The second one our team lost to Education 8-5. However, in last Thursday's game against Pharmacy, the Voc Ags won 1-0.

WATER POLO

This team has still to win their first game but are in there pitching and are hoping for a win before long.

BOWLING

Since the last issue of the Views, the point standing has changed considerably. The order in which the teams now stand are:

King Pins	31
Wild Cats	30
Speed Balls	29
P's & B's	28
Hicks	25
Bob Cats	25
Four Aces	24
Badgers	20

A very successful small games tournament was held on Sunday afternoon, Jan. 22. A large number of entrants participated in checkers, ping pong and crokinole. George Husband outwitted Alex Olsen to become checker champion while George Horner returned enough of Bernie Linnell's lightning drives to capture the ping pong title. Vern Afseth was victorious in crokinole, defeating Hewie Powell.

Dairy News (cont'd)

Service is always better on these days. This can be overlooked, for some have wives and sweethearts back home. The solution to this has been found by only one; he has his wife come to see him. Aside from these minor details, the class is shaping up well.

Wo, the students of both Dairy and Short course, wish to thank you for accepting us in your Association and for the privilege of being able to participate in your social functions and activities.

- Joe Hammel

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